

**REMARKS**

Claims 1-7 and 9-16 are pending in the application, with claims 9-16 having been withdrawn from consideration..

Claims 1, 2 and 4-7 have been amended in order to more particularly point out and distinctly claim the subject matter to which the Applicants regard as their invention. It is believed that this Amendment is fully responsive to the Office Action dated **September 12, 2002**.

**Claim Rejections under 35 USC §112**

Claims 1, 2 and 4-8 are rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, Claims 1, 2, 4-8 are rejected as reciting elements having insufficient antecedent basis. Taking the Examiner's comments into consideration, claims 1, 2 and 4-7 are amended. Therefore, withdrawal of the rejection of Claims 1, 2 and 4-8 under 35 USC §112, second paragraph, is respectfully requested.

**Double Patenting**

In item 3 of the Office action, the Examiner indicated that claims 7 and 8 are duplicates of each other and upon allowance would be objected to under double patenting. Taking the Examiner's comments into consideration, claim 8 has been canceled in the response to this Office Action and the objection to claim 7 has been obviated by this cancellation of claim 8.

Therefore, withdrawal of the objection to claim 7 and 8 is respectfully requested.

**Claim Rejections under 35 USC §103**

Claims 1-6 are rejected under 35 USC §103(a) as being unpatentable over Hayashi et al. in view of Okajima et al.

At the outset, it should be noted that Hayashi et al. is assigned to Sanyo Electric Company, as is the present application.

It should be noted under 35 USC § 103 (c), at the very least, Hayashi et al. may not be used as prior art in a rejection under 35 USC § 103 (a). 35 USC § 103 (c) states:

**(c) Subject matter developed by another person**, which qualifies as prior art only under one or more of **subsections (e), (f), and (g) of section 102** of this title, **shall not preclude patentability under this section** where the subject matter and the claimed invention were, at the time the invention was made, **owned by the same person or subject to an obligation of assignment to the same person**. (Emphasis Added)

Hayashi et al. issued as a Patent on September 28, 1999, and was filed on March 27, 1997. The present application has a priority date for Japanese patent application 11-272436 of September 27, 1999. Therefore, to qualify as prior art under 35 USC § 103(a), Hayashi et al. only qualifies under 35 USC § 102 (e). Since both the present application and Hayashi et al. were assigned to Sanyo Electric Company, Hayashi et al. may not be used as prior art under 35 USC §103 (a) due to 35 USC § 103(c).

Hayashi et al. describes any semiconductor laser having an n-type GaAs substrate (1), a Se doped n-type GaAs buffer layer (2), a n-type AlGaAs buffer layer (3), an Se doped n-type AlGaAs

cladding layer (4), an undoped AlGaAs optical guide layer (5), an undoped active layer (6), an undoped AlGaAs optical guide layer (7), a Zn doped p-type AlGaAs cladding layer (8), a stripe-shaped Zn doped p-type AlGaAs etching stop layer (9), a Zn doped p-type AlGaAs cladding layer (10), a Zn doped p-type GaAs cap layer (11), a ridge portion (12), current blocking layer (13), an Se doped n-type AlGaAs current blocking layer (14), an Se doped n-type GaAs current blocking layer (15), a Zn doped p-type GaAs contact layer (16), and a p-side electrode (17).

Okajima et al. describes a ridge portion of a semiconductor laser that is roughly set at a 90 degree angle.

Hayashi et al. does not suggest or disclose "a distance  $t$  between said emission layer and said current blocking layer satisfies a relation of  $t \leq 0.275/(1 - (X2-X1)) [\mu\text{m}]$ " as recited in claim 1. Therefore, Applicants respectfully traverse the Examiner's ground rejection.

Therefore, withdrawal of the rejection of Claims 1-6 under 35 USC §103(a) as being unpatentable over Hayashi et al. in view of Okajima et al. is respectfully requested.

Claims 7 and 8 are rejected under 35 USC §103(a) as being unpatentable over Hayashi and Okajima as applied to claim 1 above, and further in view of Narui et al.

Narui et al. describes layers 3-9 of a semiconductor laser as either plane or inclined.

Claim 7 is allowable by virtue of its dependence upon an allowable independent claim. Therefore, withdrawal of the rejection of Claims 7 and 8 under 35 USC §103(a) as being

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unpatentable over Hayashi and Okajima as applied to claim 1 above, and further in view of Narui et al. is respectfully requested.

**Conclusion**

In view of the aforementioned amendments and accompanying remarks, claims 1, 2 and 4-7, as amended, are in condition for allowance, which action, at an early date, is requested.

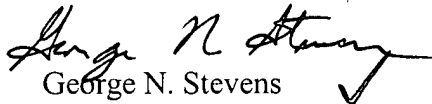
If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

Enclosures: Version with markings to show changes made

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**IN THE CLAIMS:**

Please amend claims 1, 2 and 4-7 as follows:

**1. (Amended)** A semiconductor laser device comprising:

a substrate;

a first conductivity type cladding layer;

an emission layer;

a second conductivity type cladding layer containing Al as a group III element and formed with a ridge portion;

a current blocking layer, formed on said second conductivity type cladding layer around said ridge portion, containing Al as a group III element in this order, wherein

an angle  $\theta$  of inclination on [the] a side surface[s] of said ridge portion with respect to [the] an upper surface of said substrate is at least  $70^\circ$  and not more than  $117^\circ$ ,

[the] a distance  $t$  between said emission layer and said current blocking layer satisfies [the] a relation of  $t \leq 0.275/(1 - (X2-X1))$  [[ $\mu\text{m}$ ]] micrometer assuming that  $X1$  represents [the] a composition ratio of Al in group III elements forming said second conductivity type cladding layer,  $X2$  represents [the] a composition ratio of Al in group III elements forming said current blocking layer [and  $t$  represents said distance], and

a lower width  $W$  of said ridge portion is at least  $2 \mu\text{m}$  and not more than  $5 \mu\text{m}$ .

**2. (Amended)** A semiconductor laser device according to claim 1, wherein  
said first conductivity type cladding layer contains Al and Ga as group III elements, and X1  
represents [the] a composition ratio of Al in [the] a sum of [the] a contents of Al and Ga, and  
said current blocking layer contains Al and Ga, and III elements, and X2 represents the  
composition ratio of Al in the sum of [the] a contents of Al and Ga.

**4. (Amended)** The semiconductor laser device according to claim 1, wherein  
said distance t between said emission layer and said current blocking layer satisfies [the] a  
relation of  $t \leq 0.252/(1 - (X2-X1))$  [ $\mu\text{m}$ ] micrometer.

**5. (Amended)** The semiconductor laser device according to claim 1, wherein  
said distance t between said emission layer and said current blocking layer is at least  $0.15 \mu\text{m}$ .

**6. (Amended)** The semiconductor laser device according to claim 1, wherein  
said distance t between said emission layer and said current blocking layer is at least  $0.2 \mu\text{m}$ .

**7. (Amended)** The semiconductor laser device according to claim 1, wherein  
[the] an upper surface of said substrate is [the] a {100} plane or inclined by several degrees  
[from the {100} plane], and said ridge portion extends in [the] a <011> direction.